FIG. 1

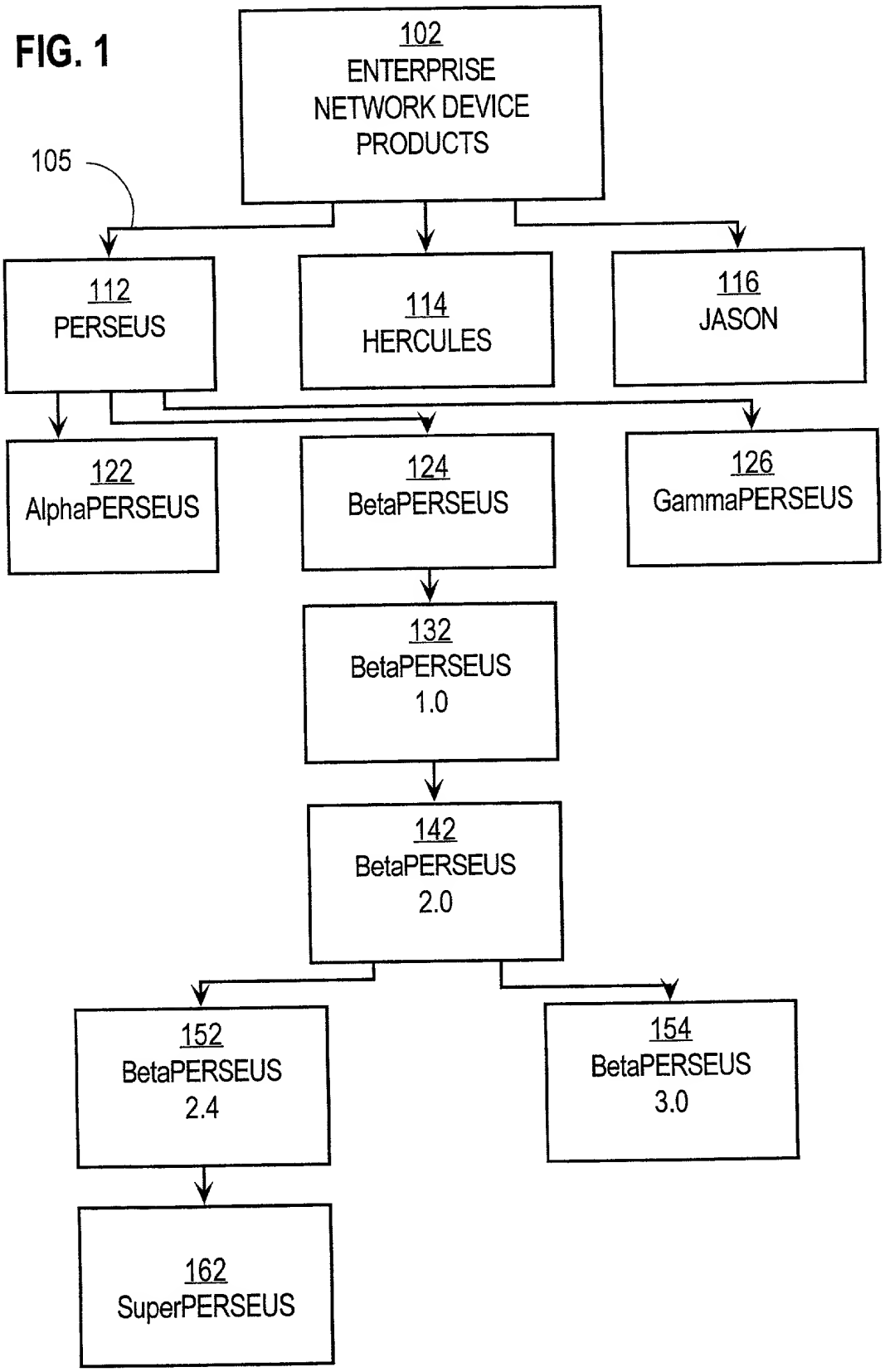

102
ENTERPRISE
NETWORK DEVICE
PRODUCTS
105
112
PERSEUS
114
HERCULES
116
JASON
122
AlphaPERSEUS
124
BetaPERSEUS
126
GammaPERSEUS
132
BetaPERSEUS
1.0
142
BetaPERSEUS
2.0
152
BetaPERSEUS
2.4
154
BetaPERSEUS
3.0
162
SuperPERSEUS

FIG. 2A

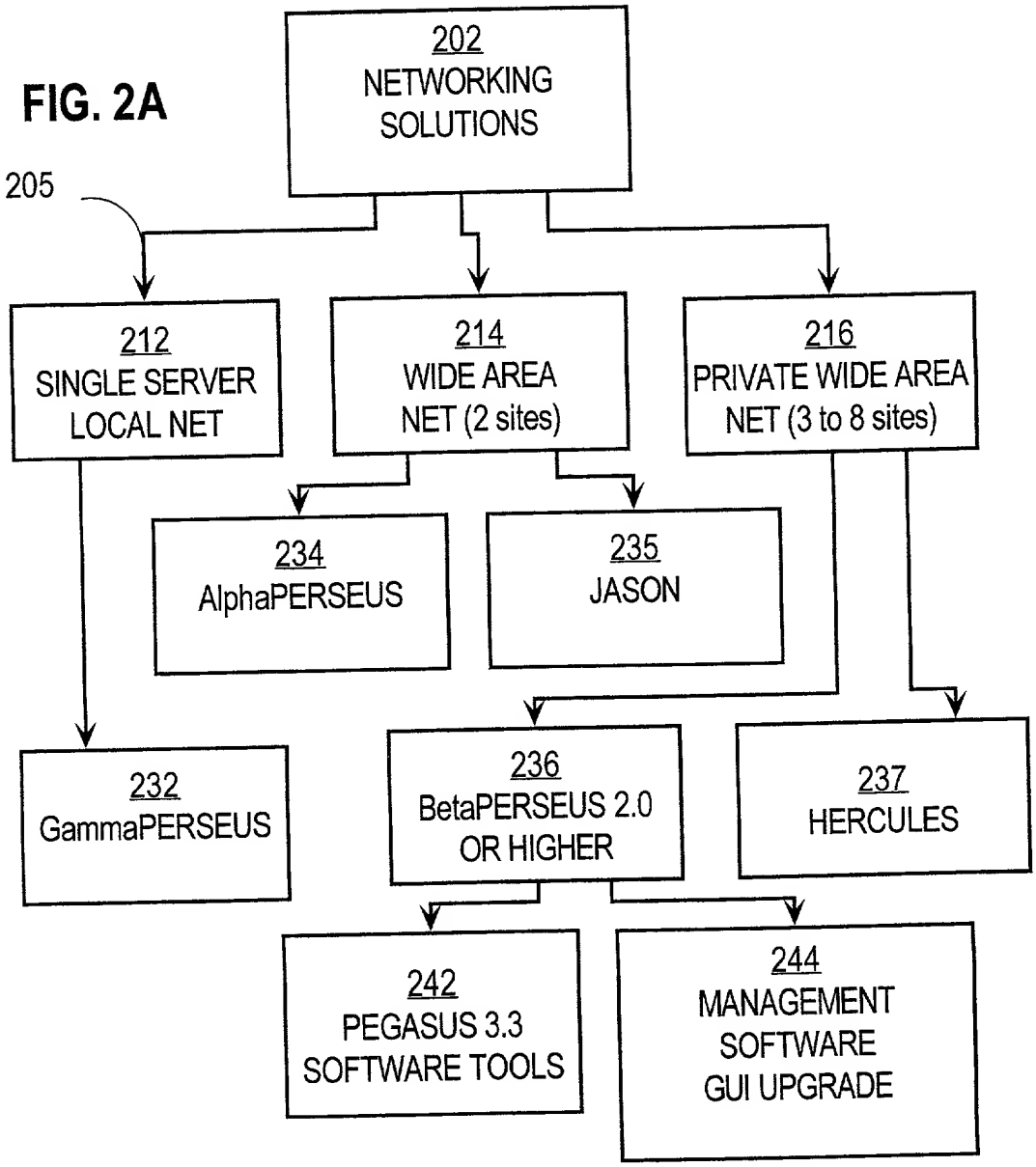

202
NETWORKING SOLUTIONS
205
212
SINGLE SERVER LOCAL NET
214
WIDE AREA NET (2 sites)
216
PRIVATE WIDE AREA NET (3 to 8 sites)
234
AlphaPERSEUS
235
JASON
232
GammaPERSEUS
236
BetaPERSEUS 2.0 OR HIGHER
237
HERCULES
242
PEGASUS 3.3 SOFTWARE TOOLS
244
MANAGEMENT SOFTWARE GUI UPGRADE

FIG. 2B

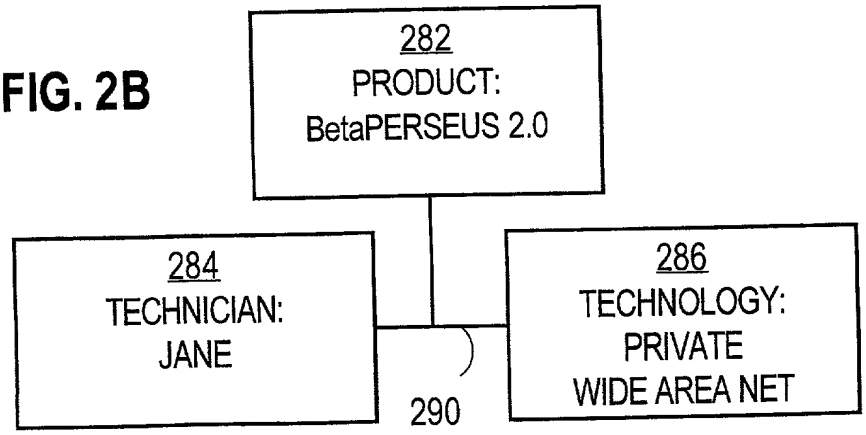

282
PRODUCT: BetaPERSEUS 2.0
284
TECHNICIAN: JANE
286
TECHNOLOGY: PRIVATE WIDE AREA NET
290

FIG. 3

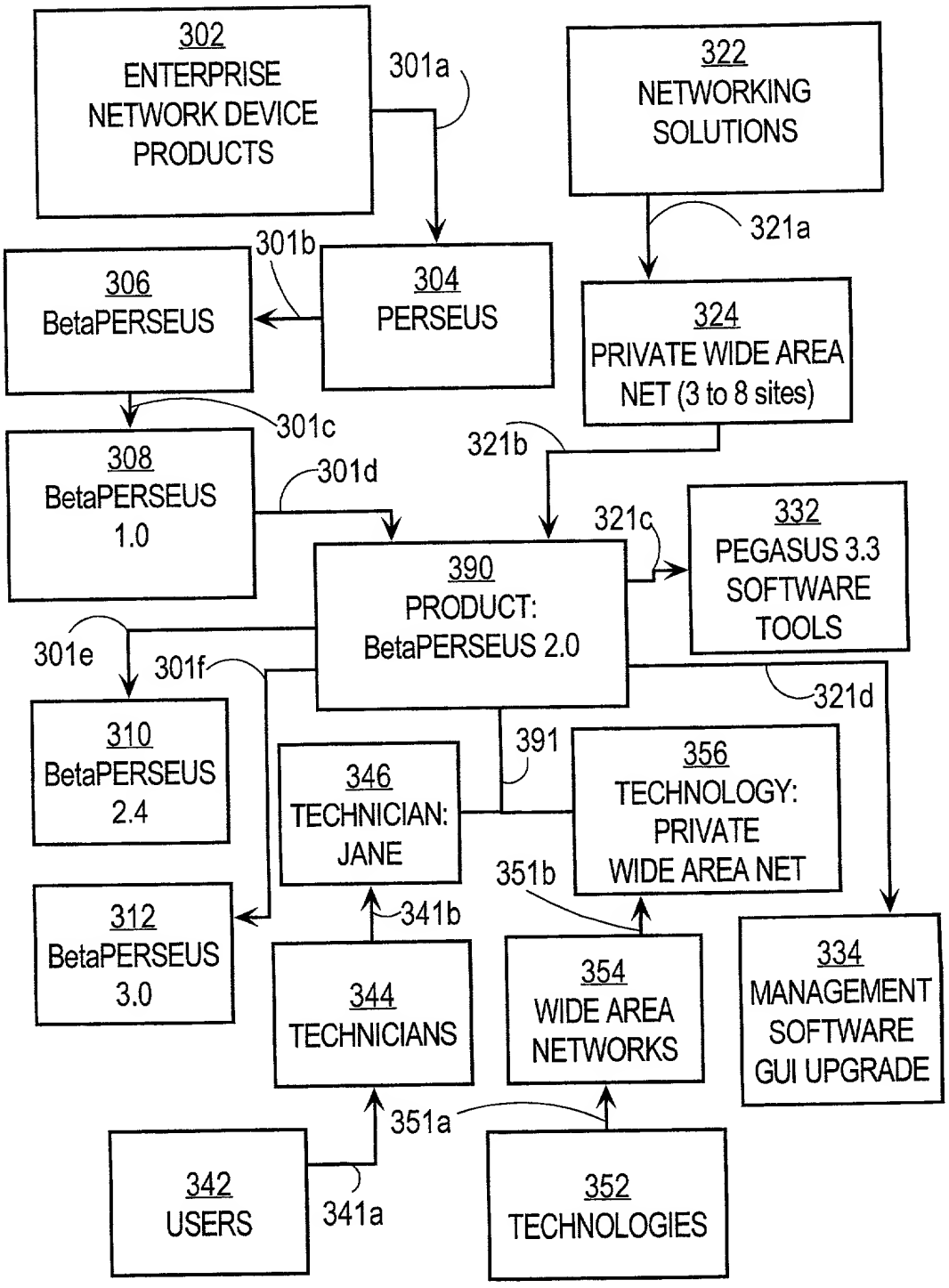

302
ENTERPRISE
NETWORK DEVICE
PRODUCTS
301a
322
NETWORKING
SOLUTIONS
321a
301b
306
BetaPERSEUS
304
PERSEUS
324
PRIVATE WIDE AREA
NET (3 to 8 sites)
301c
308
BetaPERSEUS
1.0
301d
321b
321c
332
PEGASUS 3.3
SOFTWARE
TOOLS
390
PRODUCT:
BetaPERSEUS 2.0
301e
301f
321d
310
BetaPERSEUS
2.4
391
346
TECHNICIAN:
JANE
356
TECHNOLOGY:
PRIVATE
WIDE AREA NET
351b
312
BetaPERSEUS
3.0
341b
344
TECHNICIANS
354
WIDE AREA
NETWORKS
334
MANAGEMENT
SOFTWARE
GUI UPGRADE
351a
342
USERS
341a
352
TECHNOLOGIES

FIG. 4A

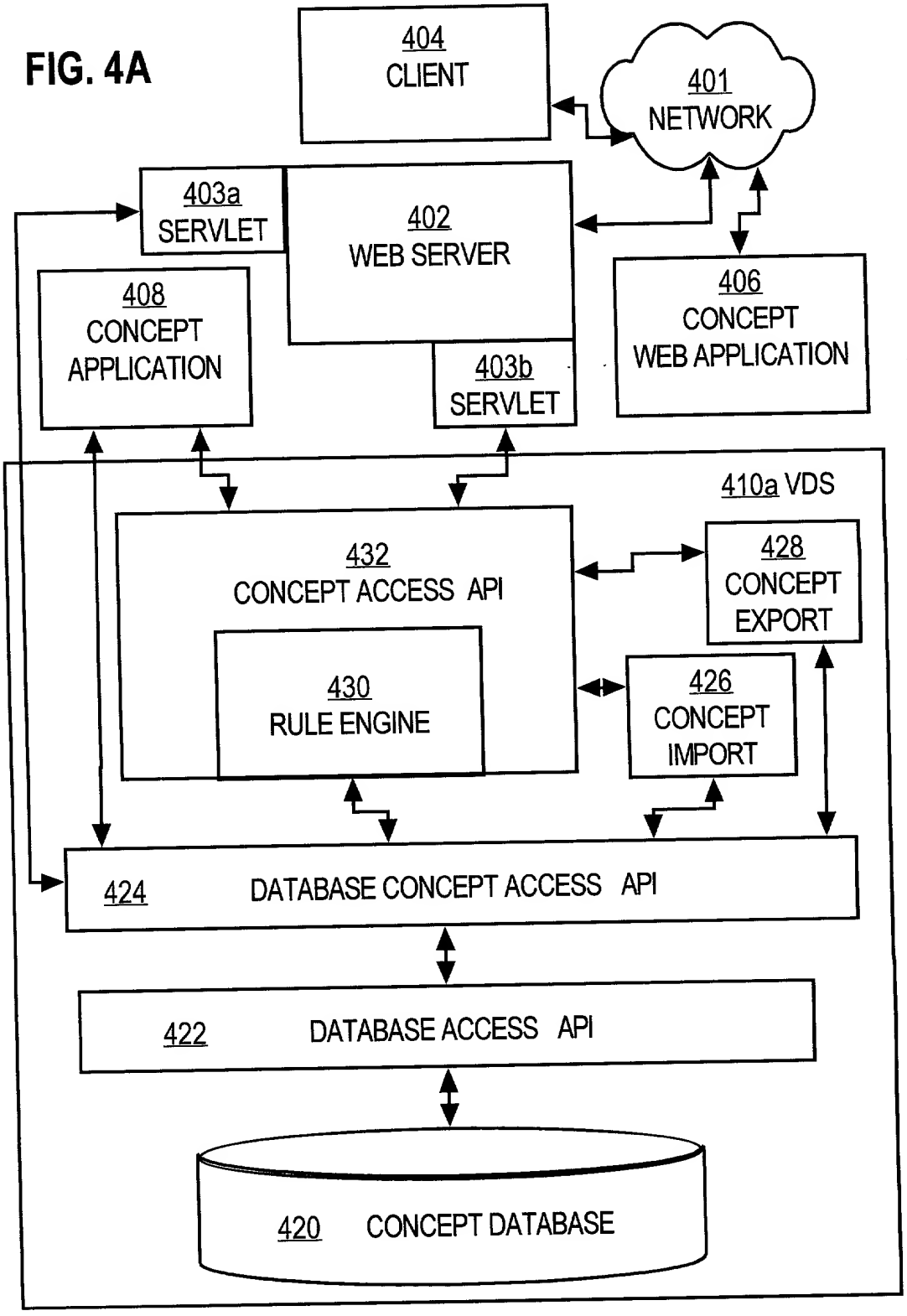

404
CLIENT
401
NETWORK
403a
SERVLET
402
WEB SERVER
408
CONCEPT
APPLICATION
403b
SERVLET
406
CONCEPT
WEB APPLICATION
410a VDS
432
CONCEPT ACCESS API
428
CONCEPT
EXPORT
430
RULE ENGINE
426
CONCEPT
IMPORT
424
DATABASE CONCEPT ACCESS API
422
DATABASE ACCESS API
420
CONCEPT DATABASE

FIG. 4B

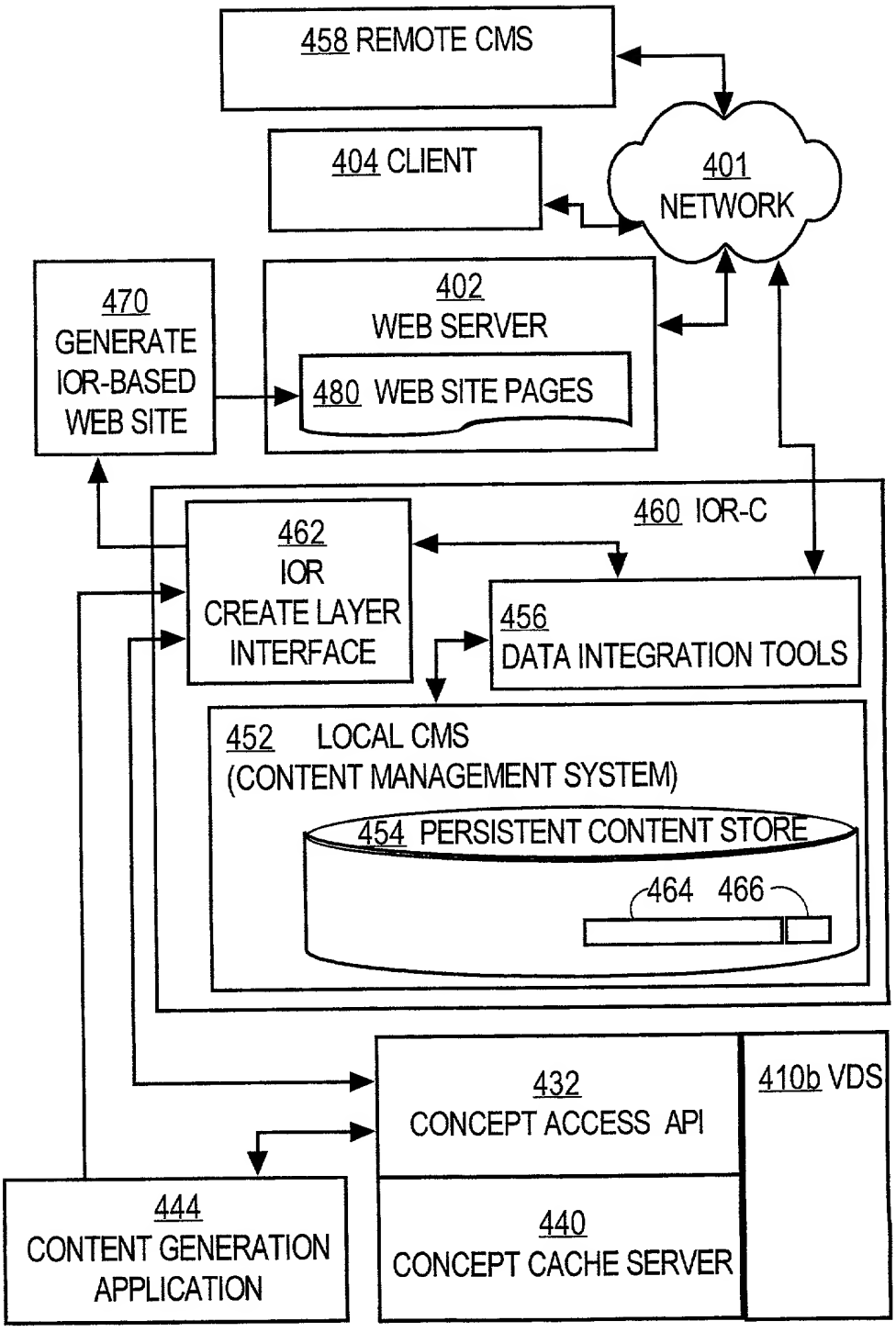
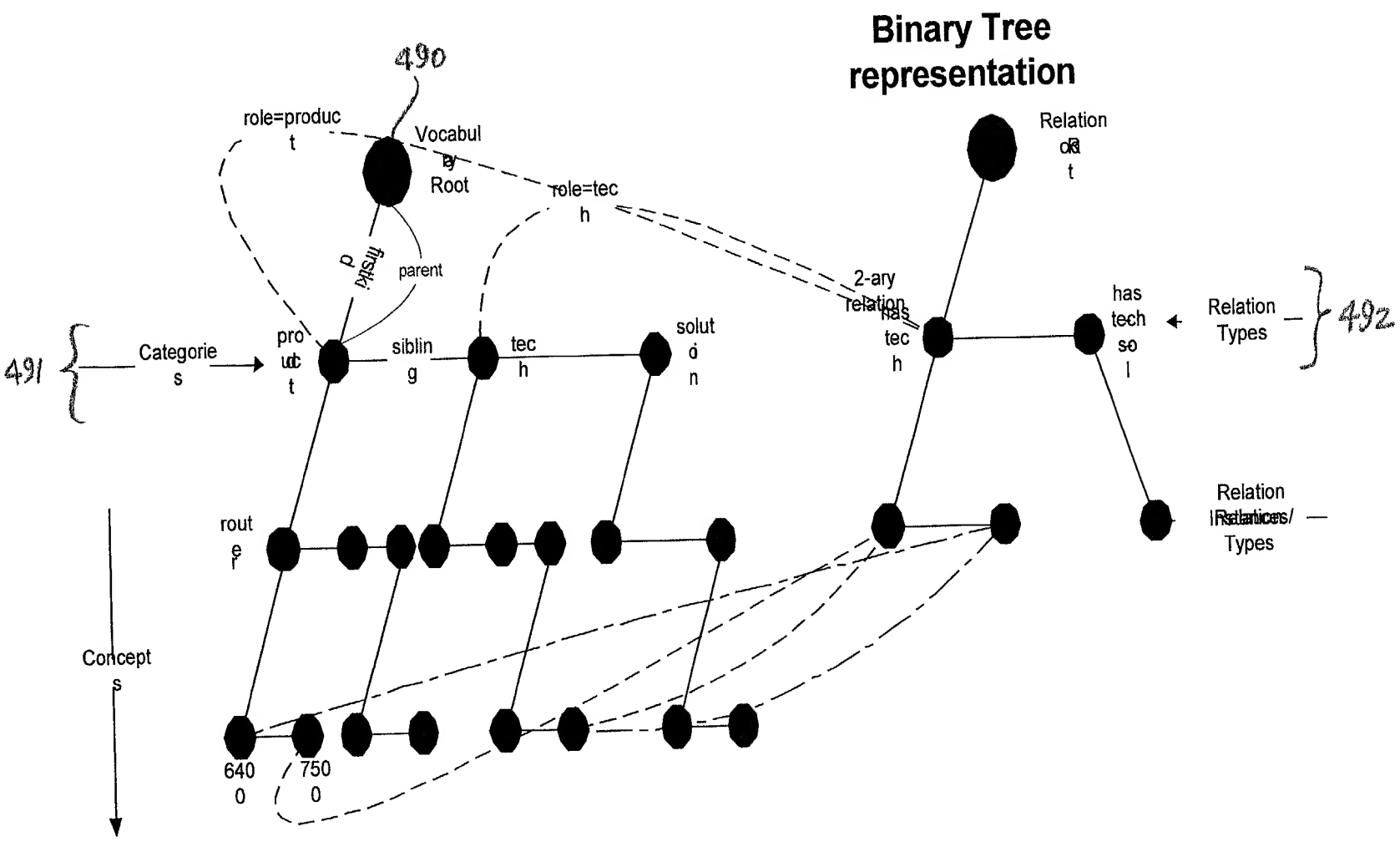
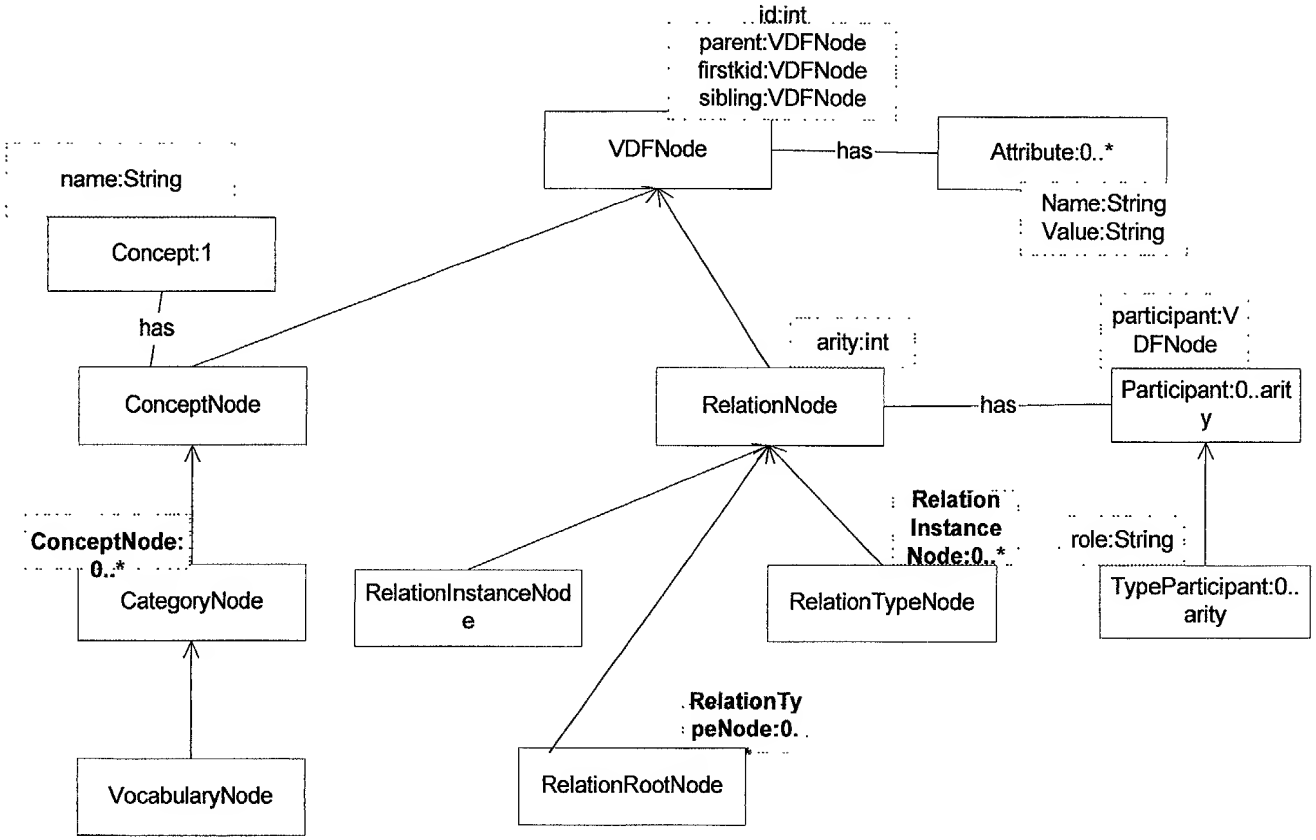

458 REMOTE CMS
404 CLIENT
401 NETWORK
470 GENERATE IOR-BASED WEB SITE
402 WEB SERVER
480 WEB SITE PAGES
460 IOR-C
462 IOR CREATE LAYER INTERFACE
456 DATA INTEGRATION TOOLS
452 LOCAL CMS (CONTENT MANAGEMENT SYSTEM)
454 PERSISTENT CONTENT STORE
464
466
432 CONCEPT ACCESS API
410b VDS
444 CONTENT GENERATION APPLICATION
440 CONCEPT CACHE SERVER

Fig. 4C


Binary Tree representation
490
role=product
Vocabulary Root
role=tech
parent
491
Categories
product
sibling
tech
solution
router
Concept
6400
7500
2-ary relation
has tech
has tech sol
Relation Types
492
Relation Types

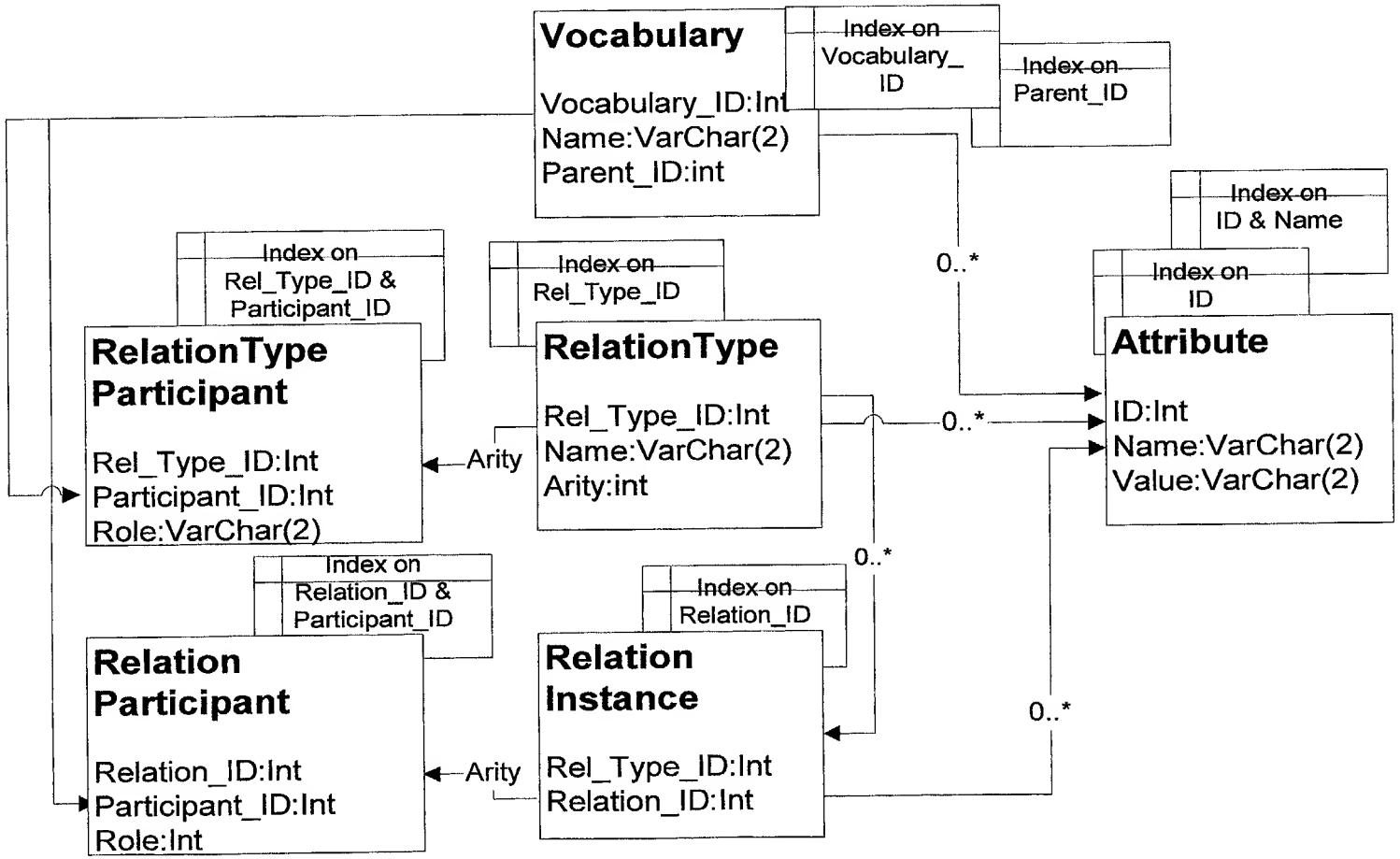
Adobe Research

Fig. 4D



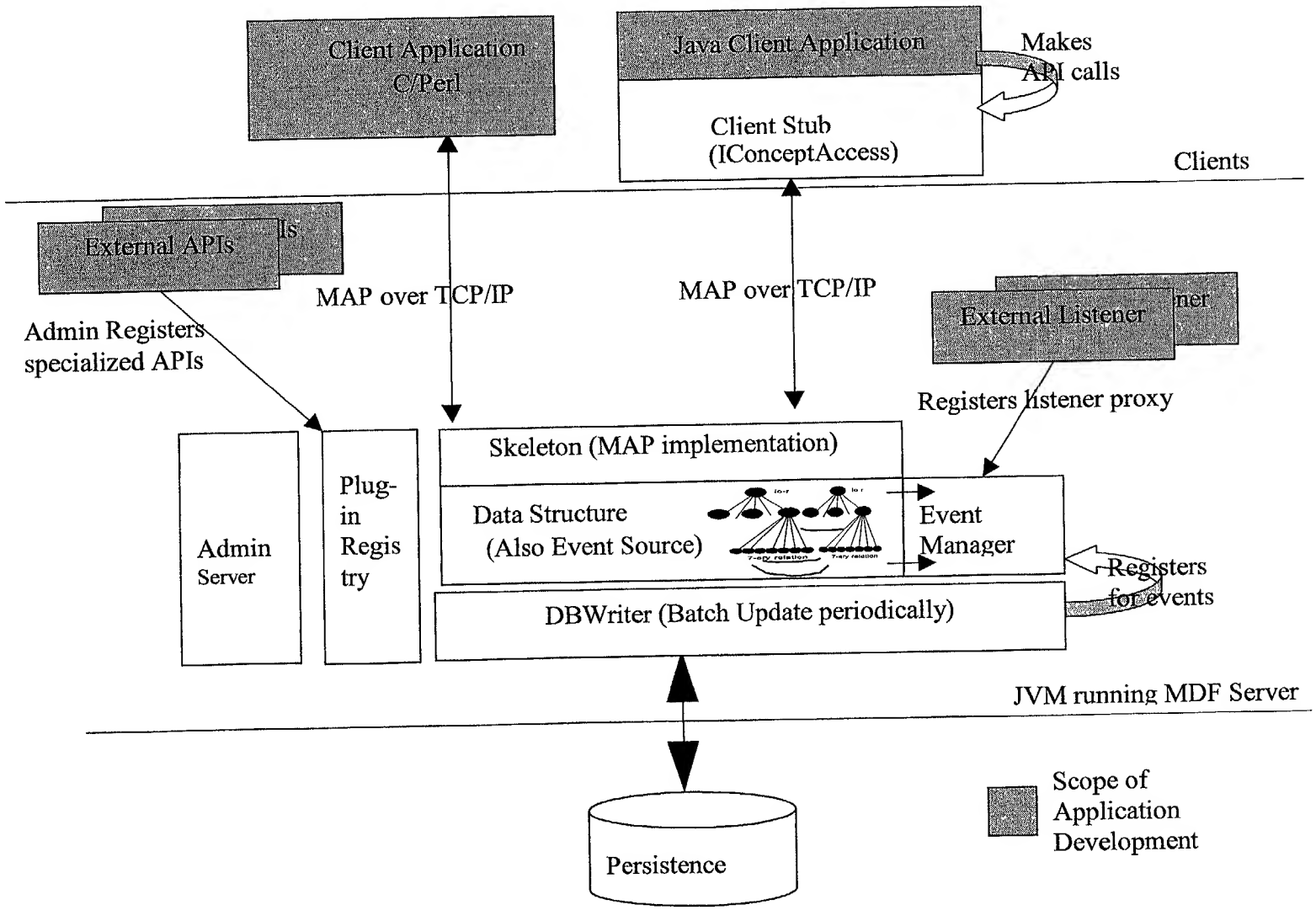
Class hierarchy of MDF Data Structure

Fig. 4E



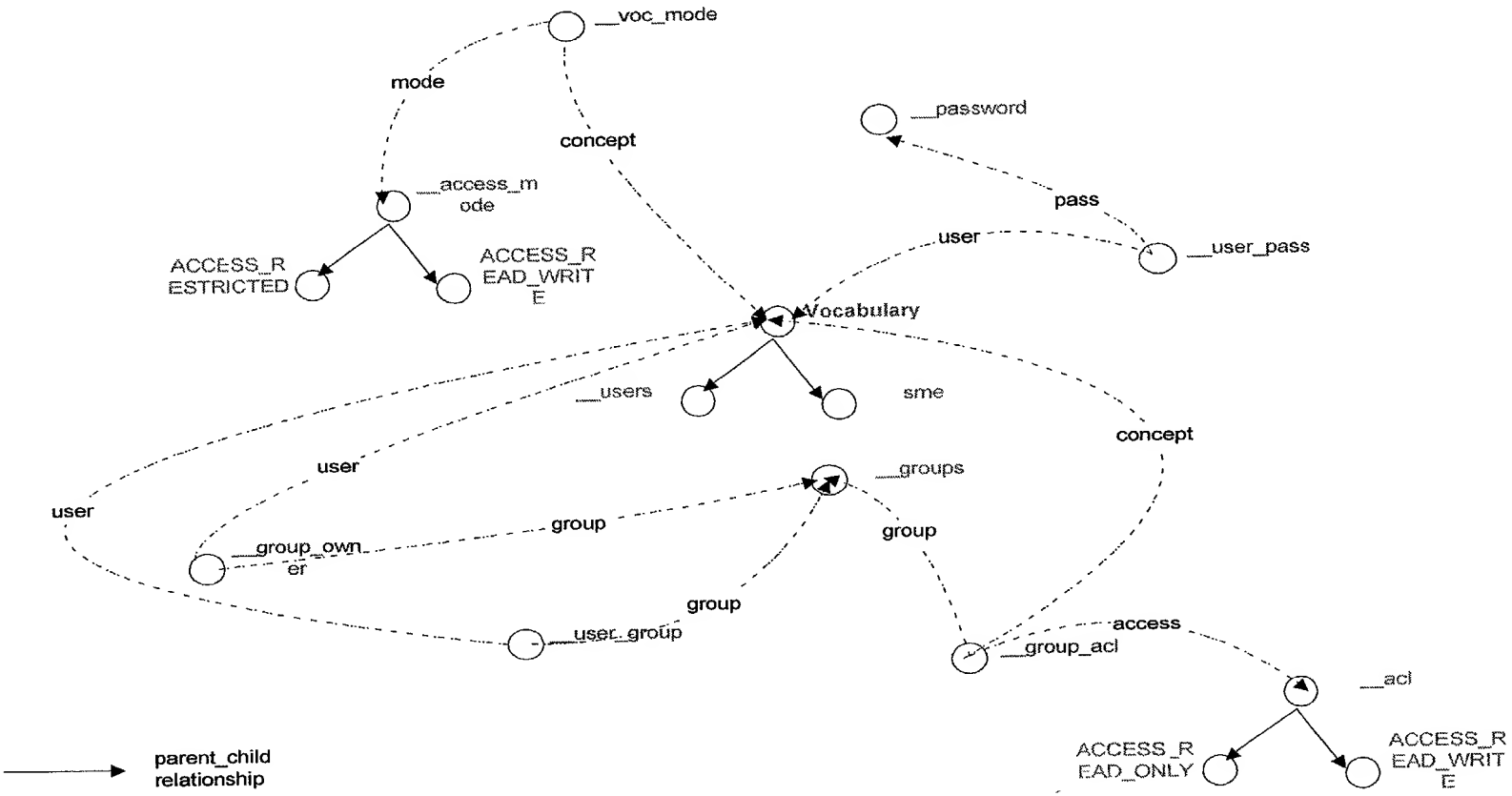
MDF Server Persistent Tables

Fig. 4F


Client Application
C/Perl
Java Client Application
Makes
API calls
Client Stub
(IConceptAccess)
Clients
External APIs
MAP over TCP/IP
MAP over TCP/IP
External Listener
Admin Registers
specialized APIs
Registers listener proxy
Skeleton (MAP implementation)
Admin
Server
Plug-
in
Regis
try
Data Structure
(Also Event Source)
Event
Manager
Registers
for events
DBWriter (Batch Update periodically)
JVM running MDF Server
Persistence
Scope of
Application
Development

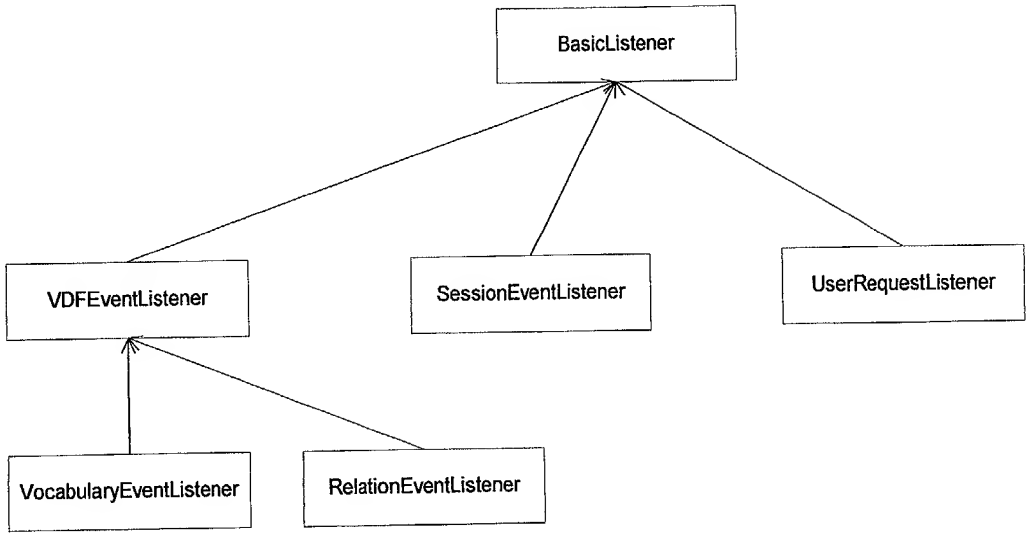
Pursuant to 1.84

Fig. 4G



ACL in VDS

Fig. 4H



Class hierarchy of VDS Event mechanism

FIG. 5

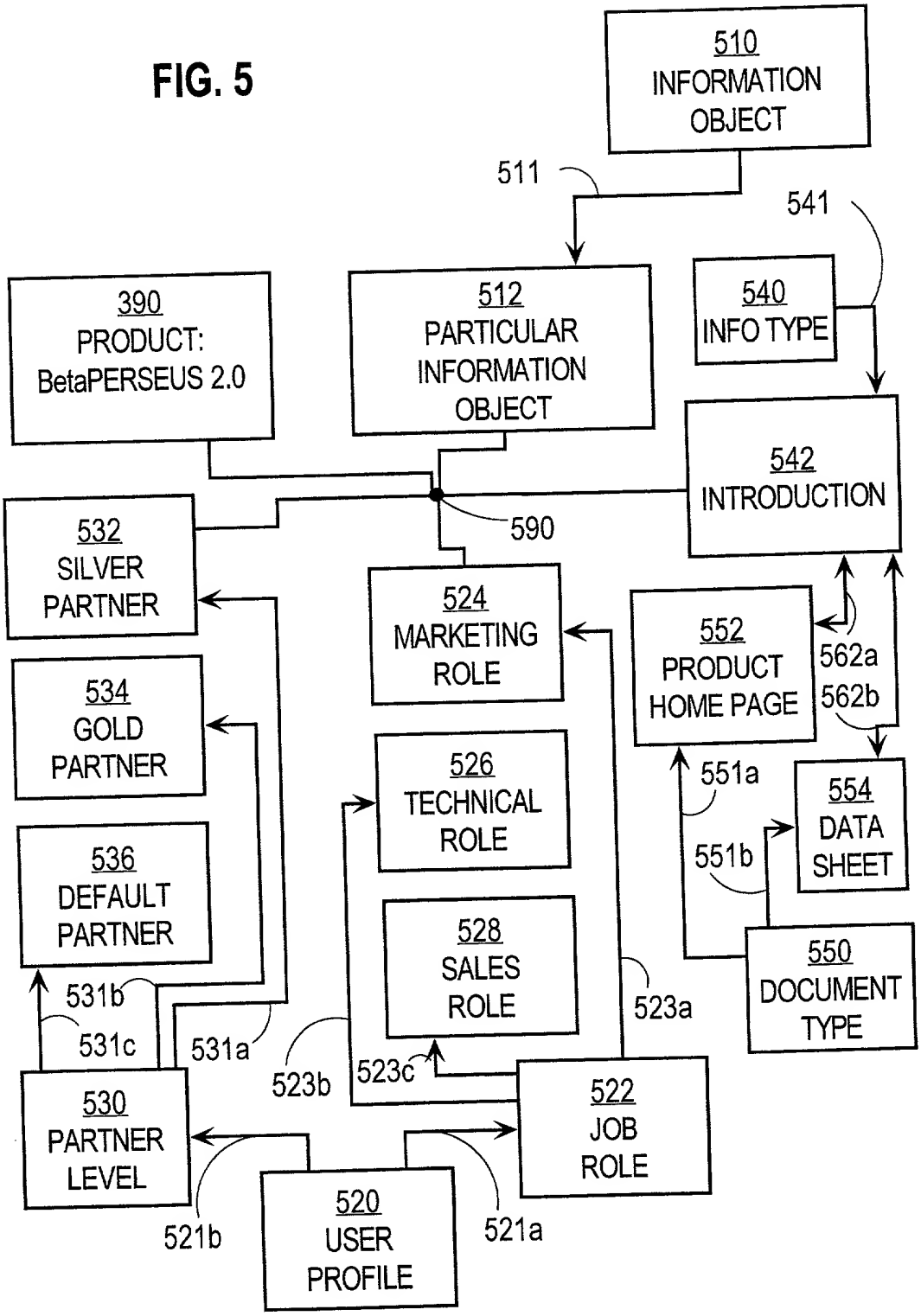

510
INFORMATION OBJECT
511
541
390
PRODUCT: BetaPERSEUS 2.0
512
PARTICULAR INFORMATION OBJECT
540
INFO TYPE
542
INTRODUCTION
590
532
SILVER PARTNER
524
MARKETING ROLE
552
PRODUCT HOME PAGE
562a
562b
534
GOLD PARTNER
526
TECHNICAL ROLE
551a
554
DATA SHEET
551b
536
DEFAULT PARTNER
528
SALES ROLE
550
DOCUMENT TYPE
531b
531c
531a
523a
523b
523c
530
PARTNER LEVEL
522
JOB ROLE
521b
520
USER PROFILE
521a

FIG. 6A

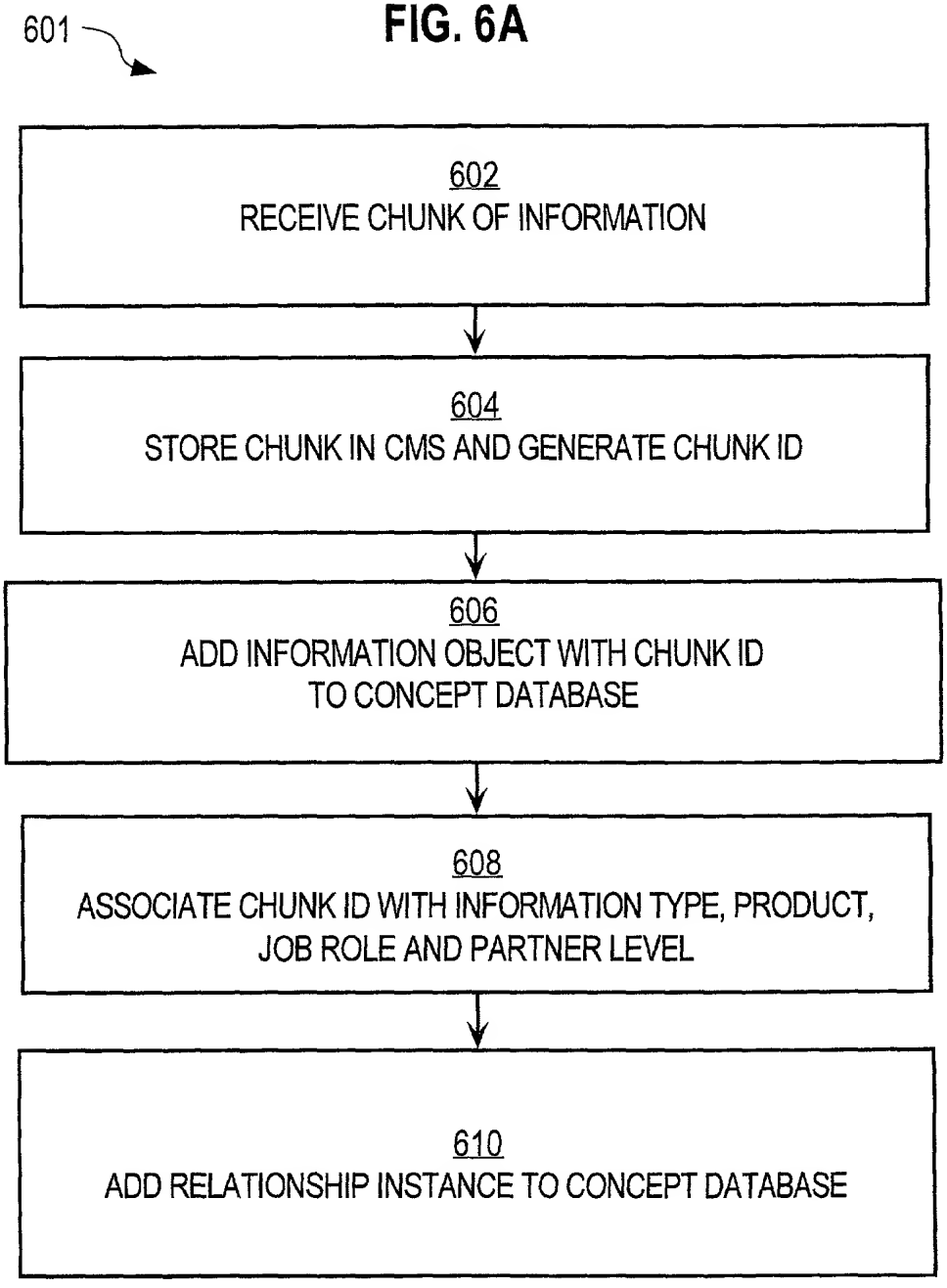

601
602
RECEIVE CHUNK OF INFORMATION
604
STORE CHUNK IN CMS AND GENERATE CHUNK ID
606
ADD INFORMATION OBJECT WITH CHUNK ID
TO CONCEPT DATABASE
608
ASSOCIATE CHUNK ID WITH INFORMATION TYPE, PRODUCT,
JOB ROLE AND PARTNER LEVEL
610
ADD RELATIONSHIP INSTANCE TO CONCEPT DATABASE

FIG. 6B

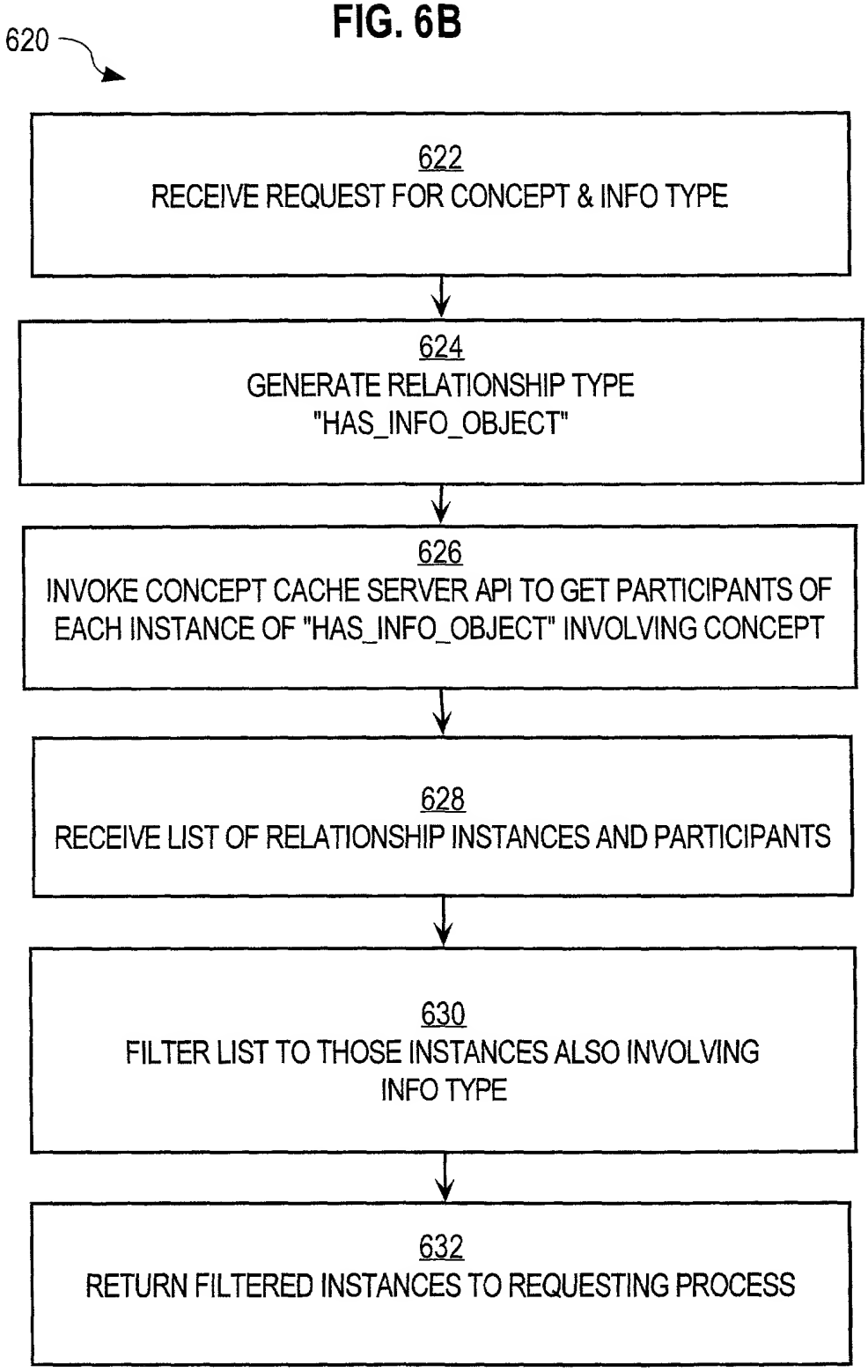

620
622
RECEIVE REQUEST FOR CONCEPT & INFO TYPE
624
GENERATE RELATIONSHIP TYPE "HAS_INFO_OBJECT"
626
INVOKE CONCEPT CACHE SERVER API TO GET PARTICIPANTS OF EACH INSTANCE OF "HAS_INFO_OBJECT" INVOLVING CONCEPT
628
RECEIVE LIST OF RELATIONSHIP INSTANCES AND PARTICIPANTS
630
FILTER LIST TO THOSE INSTANCES ALSO INVOLVING INFO TYPE
632
RETURN FILTERED INSTANCES TO REQUESTING PROCESS

FIG. 6C

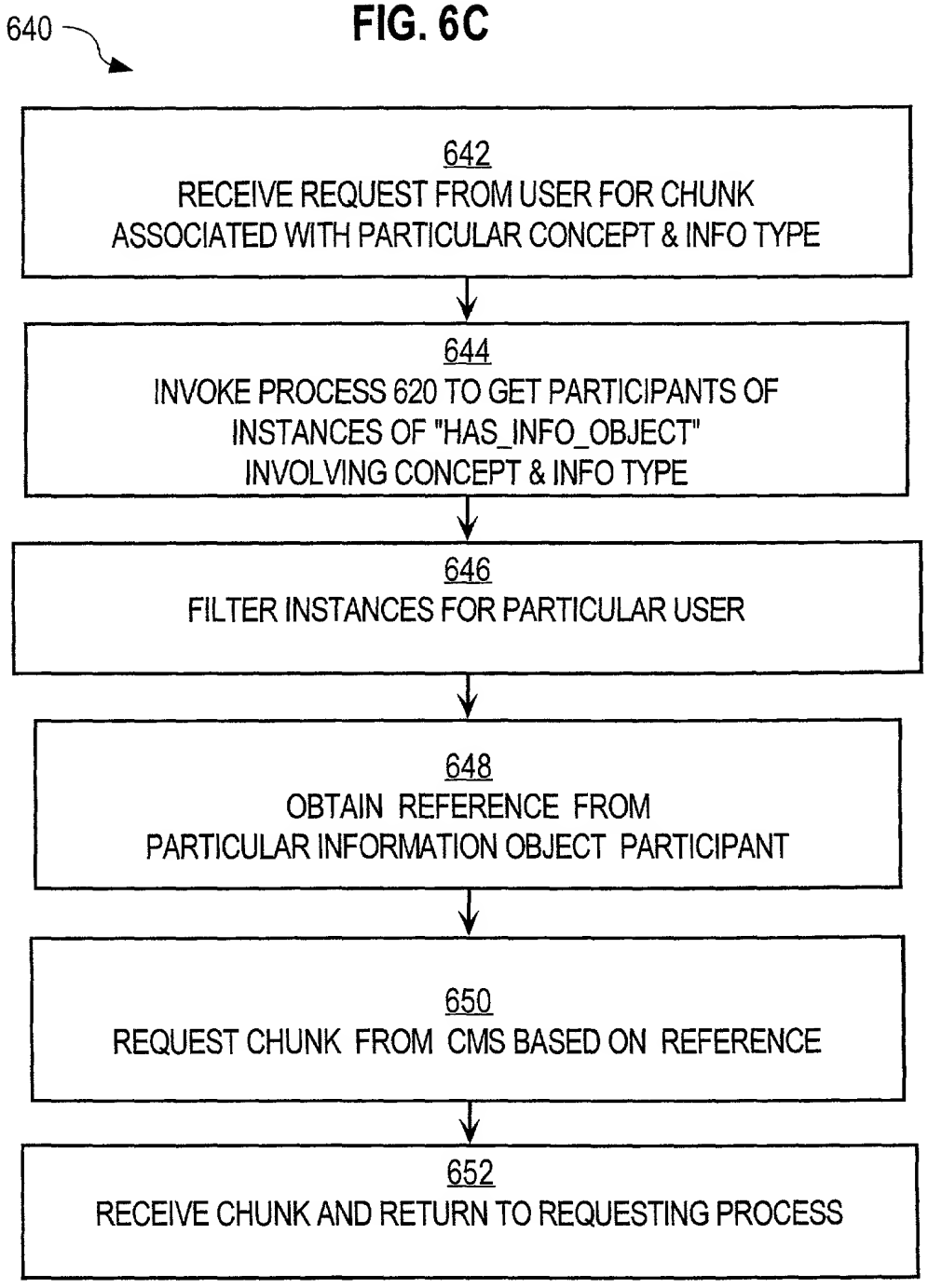

640
642
RECEIVE REQUEST FROM USER FOR CHUNK ASSOCIATED WITH PARTICULAR CONCEPT & INFO TYPE
644
INVOKE PROCESS 620 TO GET PARTICIPANTS OF INSTANCES OF "HAS_INFO_OBJECT" INVOLVING CONCEPT & INFO TYPE
646
FILTER INSTANCES FOR PARTICULAR USER
648
OBTAIN REFERENCE FROM PARTICULAR INFORMATION OBJECT PARTICIPANT
650
REQUEST CHUNK FROM CMS BASED ON REFERENCE
652
RECEIVE CHUNK AND RETURN TO REQUESTING PROCESS

FIG. 7

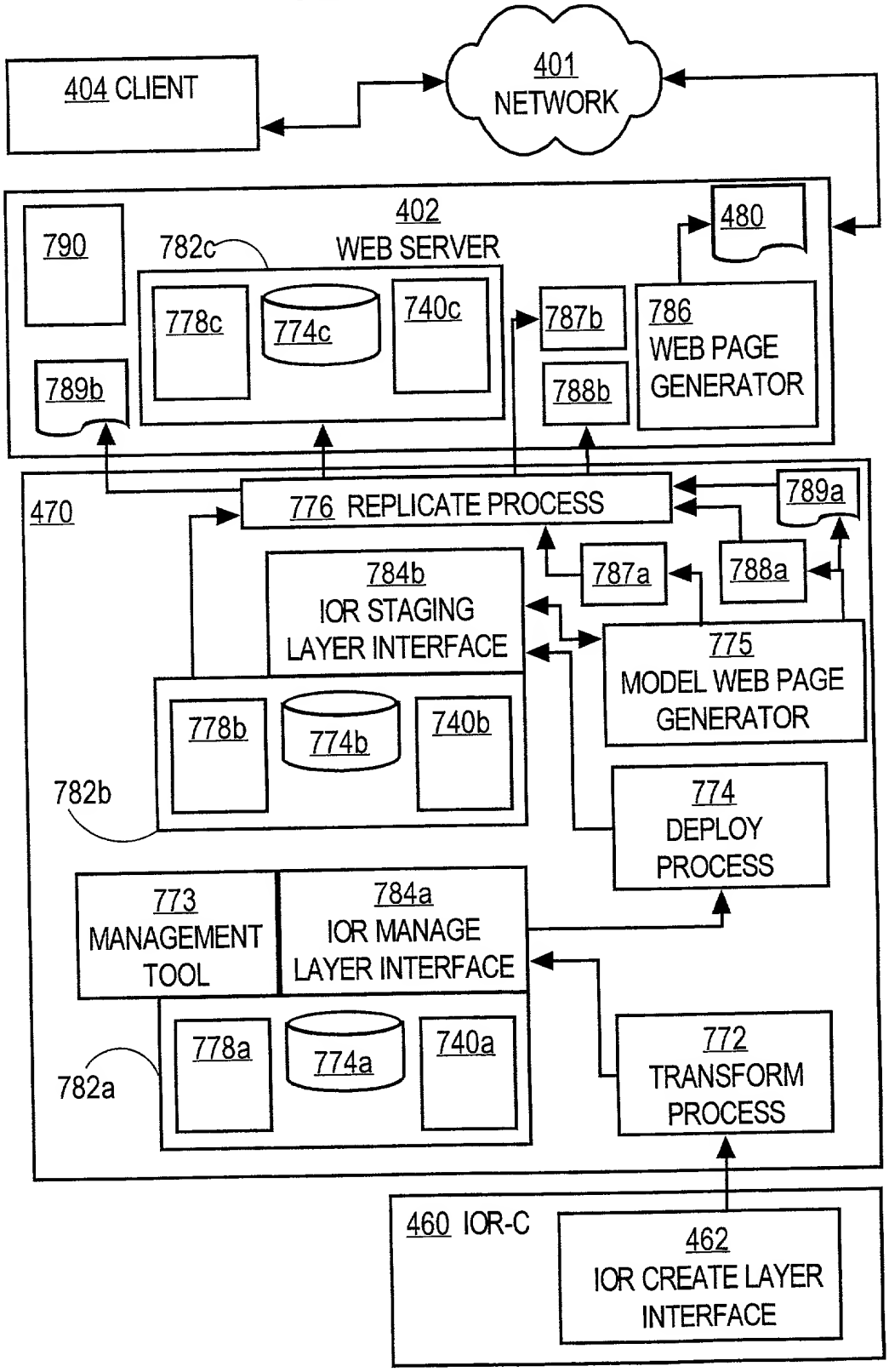

404 CLIENT
401
NETWORK
402
WEB SERVER
790
782c
778c
774c
740c
789b
480
787b
786
WEB PAGE
GENERATOR
788b
470
776 REPLICATE PROCESS
789a
784b
IOR STAGING
LAYER INTERFACE
787a
788a
775
MODEL WEB PAGE
GENERATOR
778b
774b
740b
782b
774
DEPLOY
PROCESS
773
MANAGEMENT
TOOL
784a
IOR MANAGE
LAYER INTERFACE
778a
774a
740a
782a
772
TRANSFORM
PROCESS
460 IOR-C
462
IOR CREATE LAYER
INTERFACE

FIG. 8A

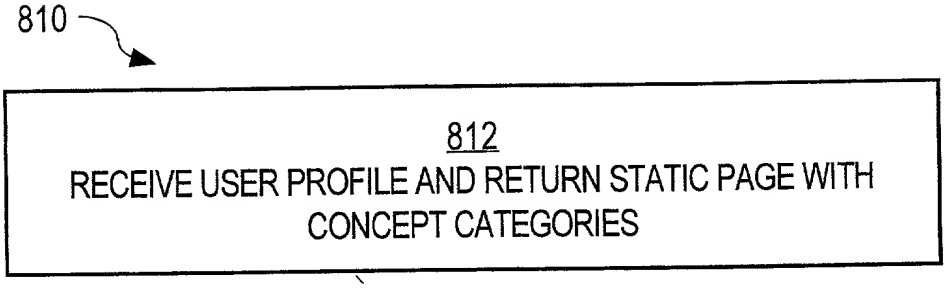

810
812
RECEIVE USER PROFILE AND RETURN STATIC PAGE WITH CONCEPT CATEGORIES

FIG. 8B

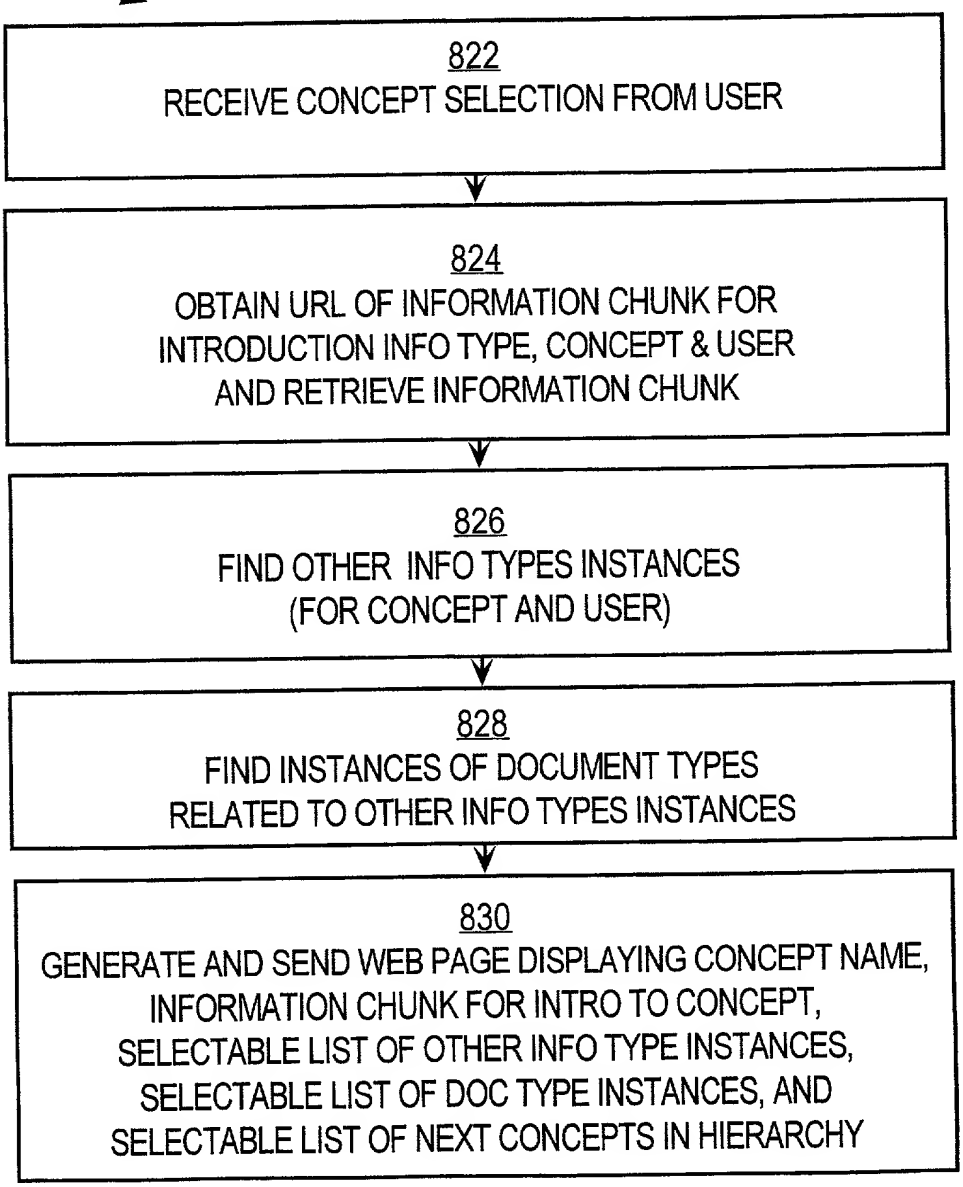

820
822
RECEIVE CONCEPT SELECTION FROM USER
824
OBTAIN URL OF INFORMATION CHUNK FOR INTRODUCTION INFO TYPE, CONCEPT & USER AND RETRIEVE INFORMATION CHUNK
826
FIND OTHER INFO TYPES INSTANCES (FOR CONCEPT AND USER)
828
FIND INSTANCES OF DOCUMENT TYPES RELATED TO OTHER INFO TYPES INSTANCES
830
GENERATE AND SEND WEB PAGE DISPLAYING CONCEPT NAME, INFORMATION CHUNK FOR INTRO TO CONCEPT, SELECTABLE LIST OF OTHER INFO TYPE INSTANCES, SELECTABLE LIST OF DOC TYPE INSTANCES, AND SELECTABLE LIST OF NEXT CONCEPTS IN HIERARCHY

FIG. 8C

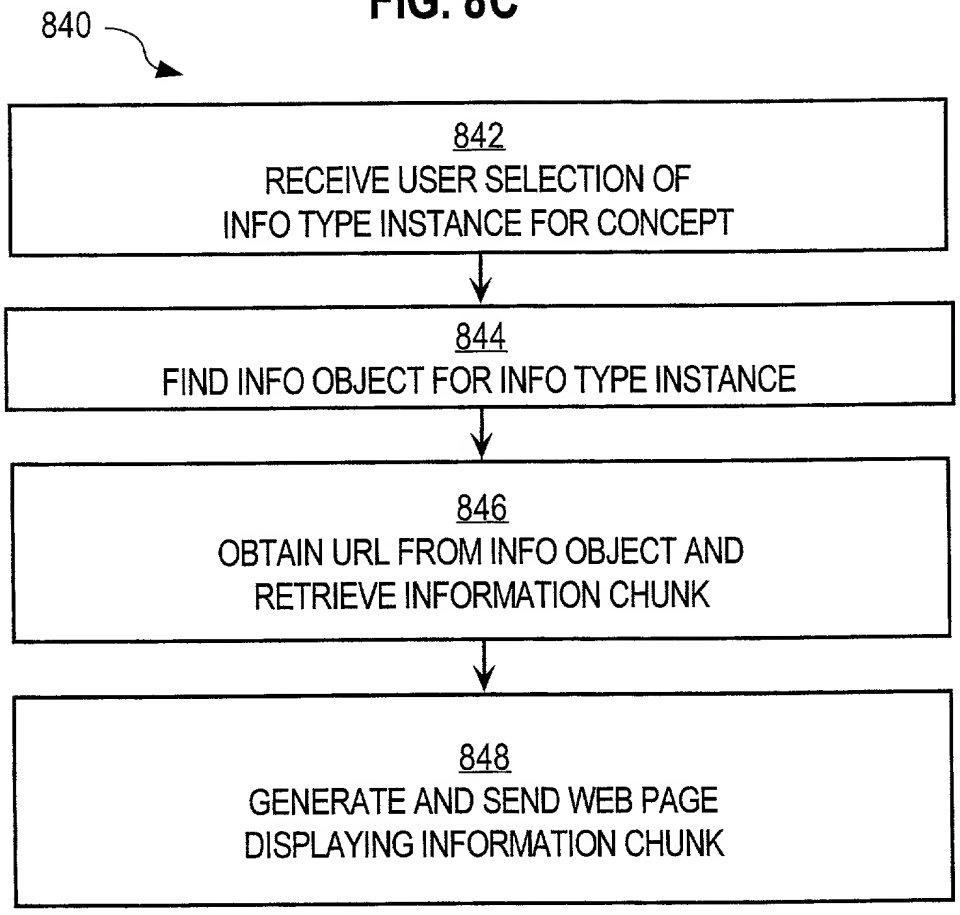

840
842
RECEIVE USER SELECTION OF
INFO TYPE INSTANCE FOR CONCEPT
844
FIND INFO OBJECT FOR INFO TYPE INSTANCE
846
OBTAIN URL FROM INFO OBJECT AND
RETRIEVE INFORMATION CHUNK
848
GENERATE AND SEND WEB PAGE
DISPLAYING INFORMATION CHUNK

FIG. 8D

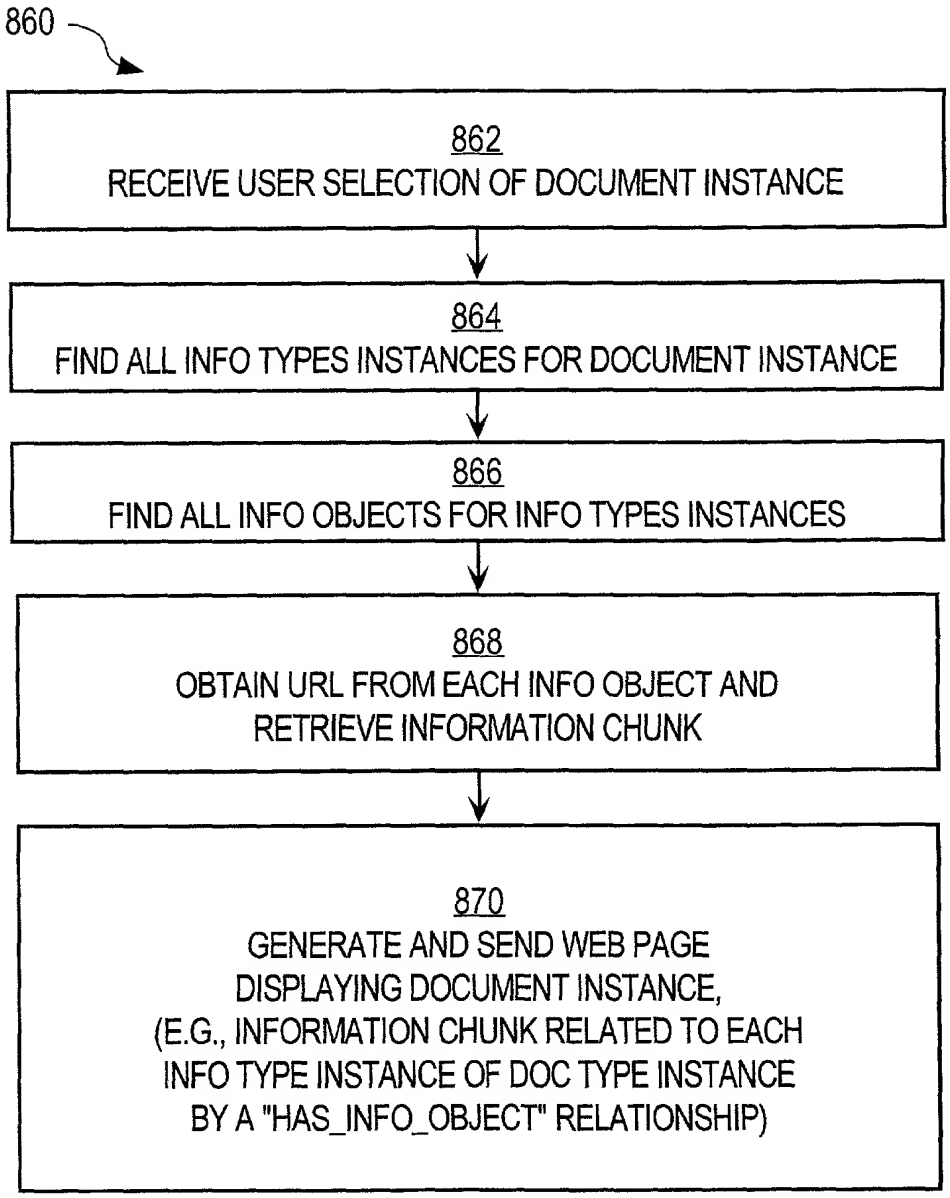

860
862
RECEIVE USER SELECTION OF DOCUMENT INSTANCE
864
FIND ALL INFO TYPES INSTANCES FOR DOCUMENT INSTANCE
866
FIND ALL INFO OBJECTS FOR INFO TYPES INSTANCES
868
OBTAIN URL FROM EACH INFO OBJECT AND
RETRIEVE INFORMATION CHUNK
870
GENERATE AND SEND WEB PAGE
DISPLAYING DOCUMENT INSTANCE,
(E.G., INFORMATION CHUNK RELATED TO EACH
INFO TYPE INSTANCE OF DOC TYPE INSTANCE
BY A "HAS_INFO_OBJECT" RELATIONSHIP)

FIG. 8E

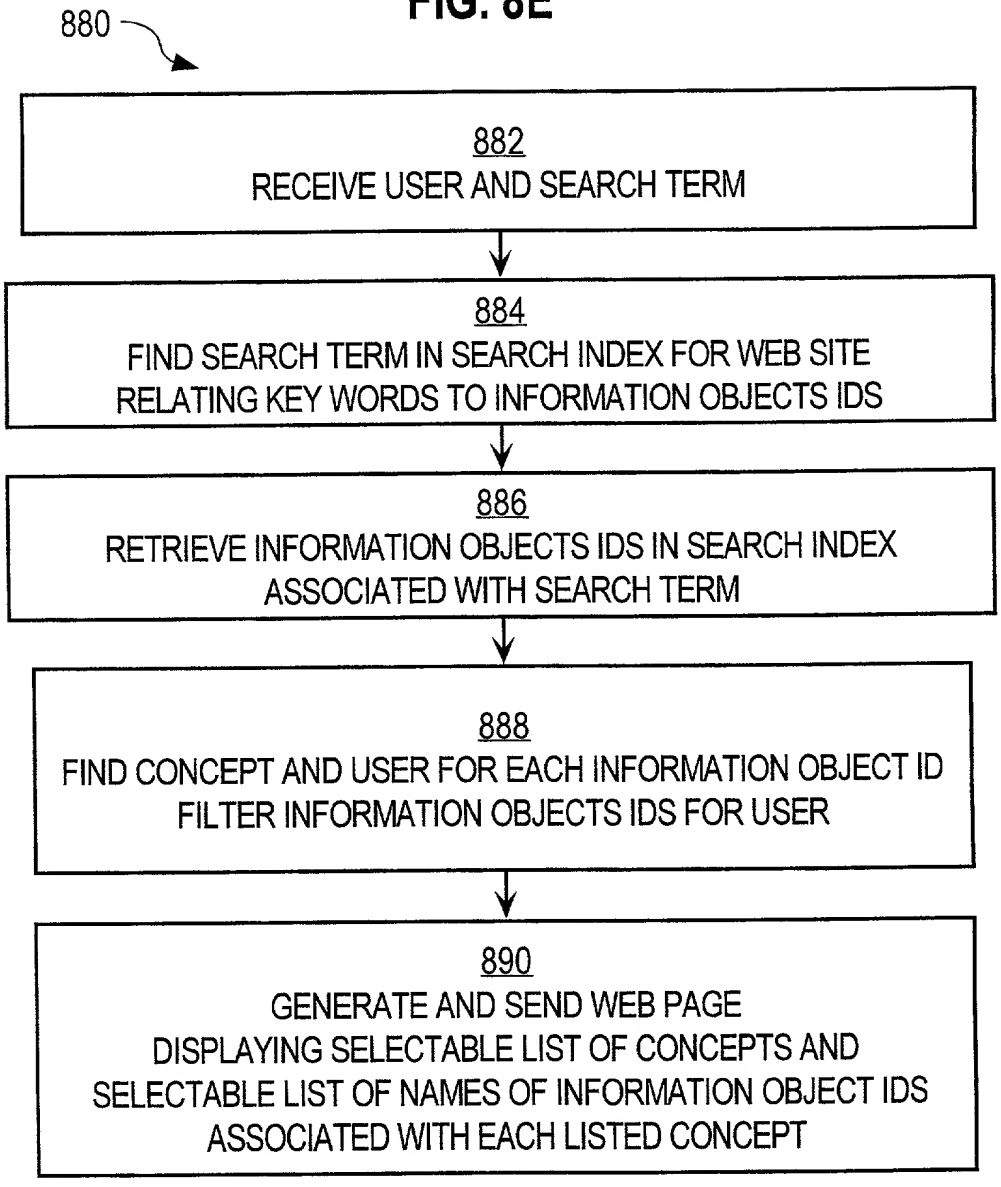

880
882
RECEIVE USER AND SEARCH TERM
884
FIND SEARCH TERM IN SEARCH INDEX FOR WEB SITE
RELATING KEY WORDS TO INFORMATION OBJECTS IDS
886
RETRIEVE INFORMATION OBJECTS IDS IN SEARCH INDEX
ASSOCIATED WITH SEARCH TERM
888
FIND CONCEPT AND USER FOR EACH INFORMATION OBJECT ID
FILTER INFORMATION OBJECTS IDS FOR USER
890
GENERATE AND SEND WEB PAGE
DISPLAYING SELECTABLE LIST OF CONCEPTS AND
SELECTABLE LIST OF NAMES OF INFORMATION OBJECT IDS
ASSOCIATED WITH EACH LISTED CONCEPT

FIG. 8F

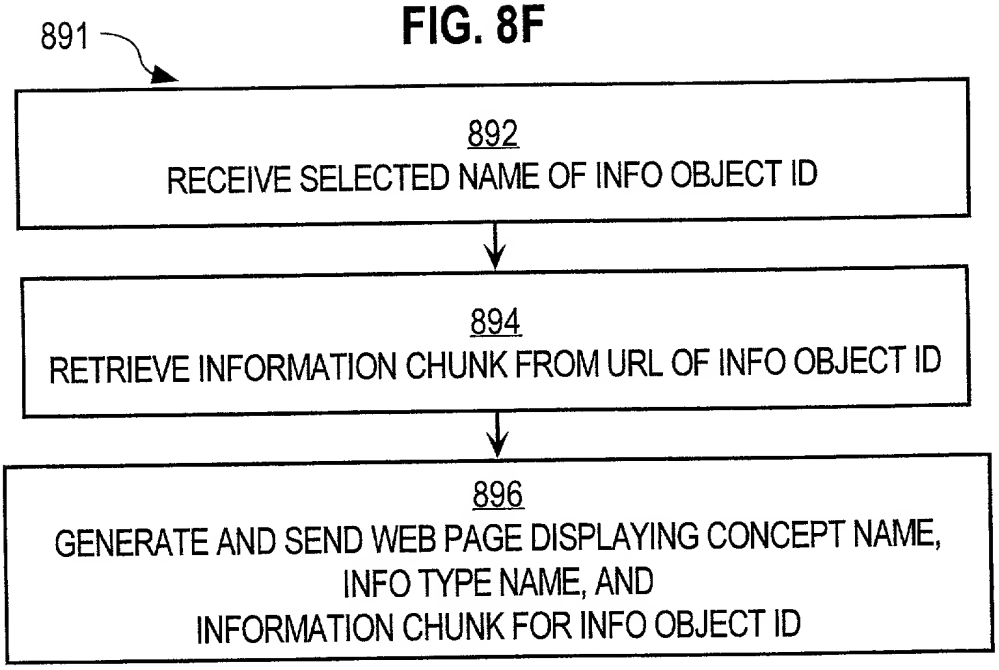

891
892
RECEIVE SELECTED NAME OF INFO OBJECT ID
894
RETRIEVE INFORMATION CHUNK FROM URL OF INFO OBJECT ID
896
GENERATE AND SEND WEB PAGE DISPLAYING CONCEPT NAME, INFO TYPE NAME, AND INFORMATION CHUNK FOR INFO OBJECT ID

FIG. 9A

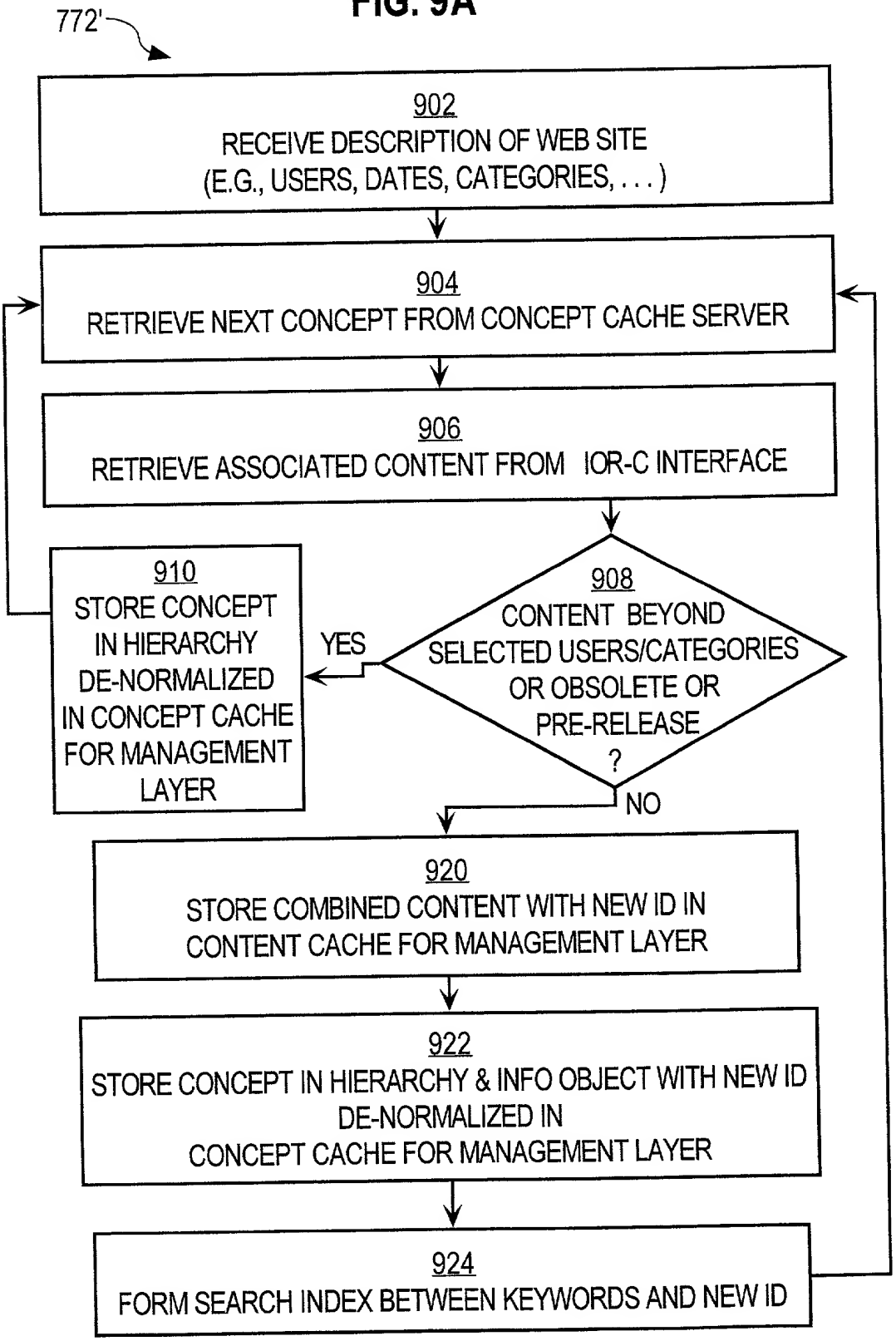

772'
902
RECEIVE DESCRIPTION OF WEB SITE
(E.G., USERS, DATES, CATEGORIES, . . .)
904
RETRIEVE NEXT CONCEPT FROM CONCEPT CACHE SERVER
906
RETRIEVE ASSOCIATED CONTENT FROM IOR-C INTERFACE
908
CONTENT BEYOND SELECTED USERS/CATEGORIES OR OBSOLETE OR PRE-RELEASE ?
YES
910
STORE CONCEPT IN HIERARCHY DE-NORMALIZED IN CONCEPT CACHE FOR MANAGEMENT LAYER
NO
920
STORE COMBINED CONTENT WITH NEW ID IN CONTENT CACHE FOR MANAGEMENT LAYER
922
STORE CONCEPT IN HIERARCHY & INFO OBJECT WITH NEW ID DE-NORMALIZED IN CONCEPT CACHE FOR MANAGEMENT LAYER
924
FORM SEARCH INDEX BETWEEN KEYWORDS AND NEW ID

FIG. 9B

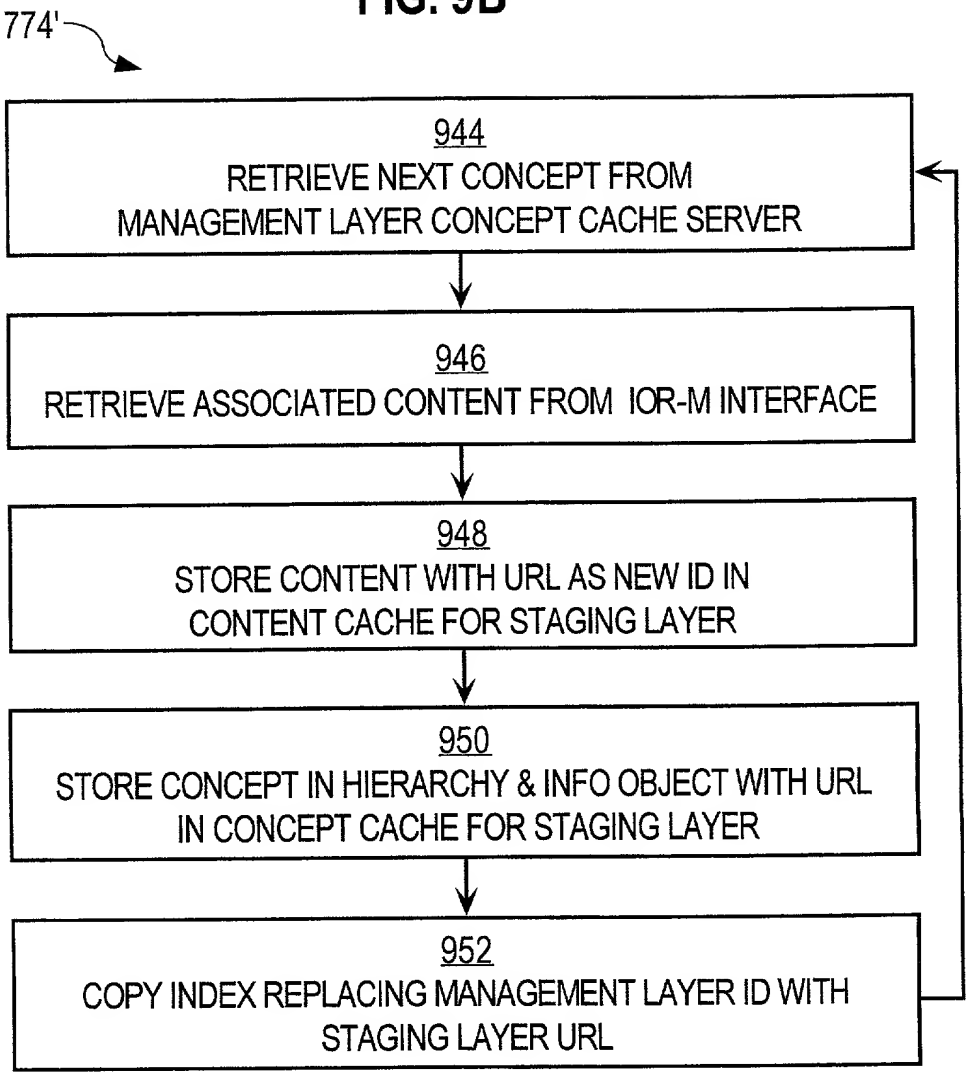
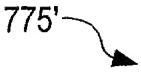

774'
944
RETRIEVE NEXT CONCEPT FROM MANAGEMENT LAYER CONCEPT CACHE SERVER
946
RETRIEVE ASSOCIATED CONTENT FROM IOR-M INTERFACE
948
STORE CONTENT WITH URL AS NEW ID IN CONTENT CACHE FOR STAGING LAYER
950
STORE CONCEPT IN HIERARCHY & INFO OBJECT WITH URL IN CONCEPT CACHE FOR STAGING LAYER
952
COPY INDEX REPLACING MANAGEMENT LAYER ID WITH STAGING LAYER URL

FIG. 9C



962
MODEL AND PREVIEW WEB PAGES FOR WEB SITE

964
RENDER STATIC PAGES FOR WEB SITE

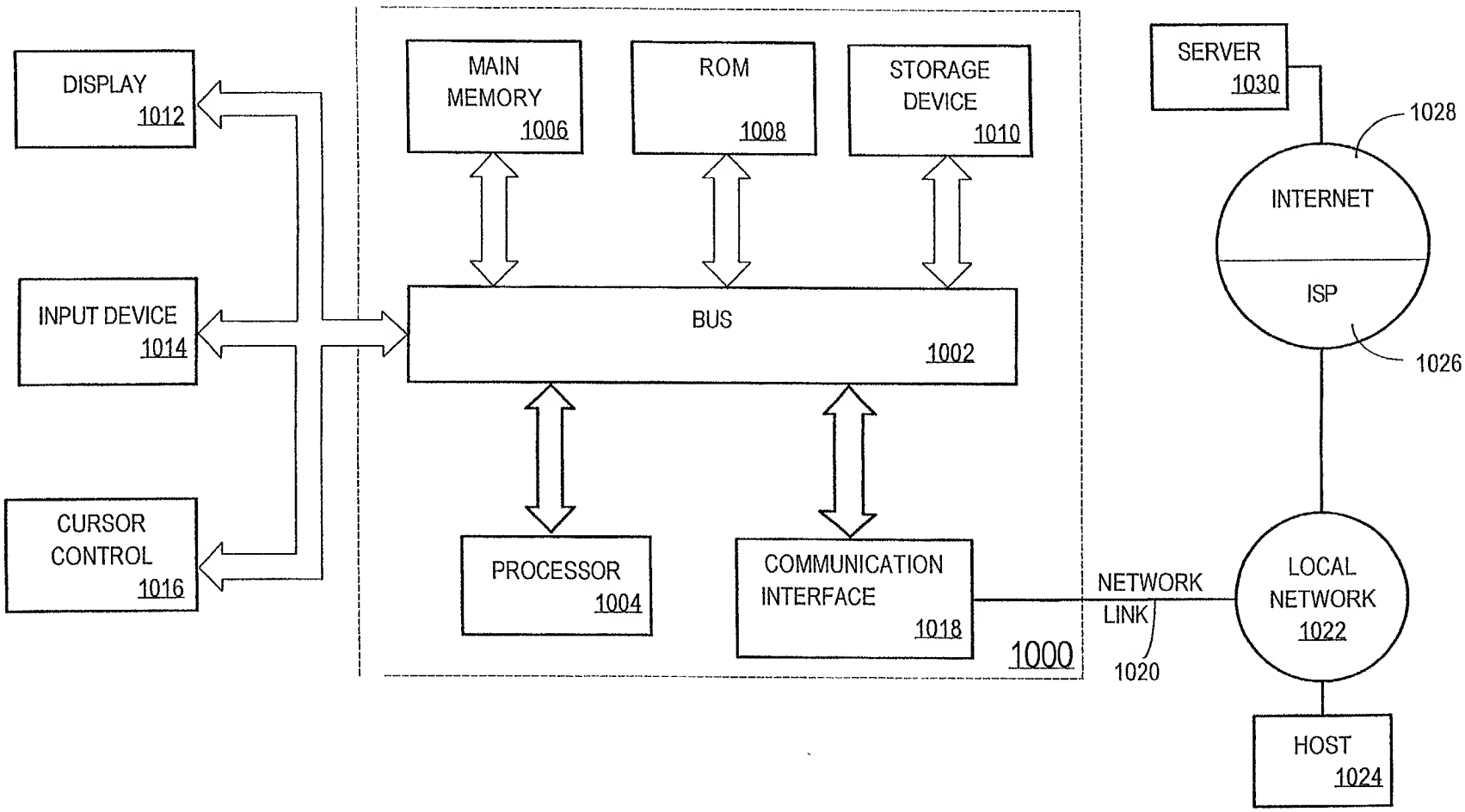
966
ENSURE EVERY CHUNK HAS INFO OBJECT AND RELATIONSHIP TO ANOTHER CONCEPT

968
VIEW AND EDIT CHUNKS

970
TEST LOAD ON SERVER FOR GENERATING WEB PAGES

972
EDIT INDEX ENTRIES OF SEARCH INDEX

FIG. 10


DISPLAY
1012
INPUT DEVICE
1014
CURSOR
CONTROL
1016
MAIN
MEMORY
1006
ROM
1008
STORAGE
DEVICE
1010
BUS
1002
PROCESSOR
1004
COMMUNICATION
INTERFACE
1018
1000
NETWORK
LINK
1020
SERVER
1030
1028
INTERNET
ISP
1026
LOCAL
NETWORK
1022
HOST
1024